ABSTRACT OF THE DISCLOSURE

A cycloolefin copolymeric (COC) optical communication device. The COC optical communication device includes a core section of functional metallocene cycloolefin copolymer (f-mCOC) having a refractive index n_1 for light transmission, and a cladding layer of metallocene cycloolefin copolymer (mCOC), having a refractive index n_2 smaller than n_1, surrounding the core section and forming a waveguide structure together with the core section. Due to the fact that the various components of the optical communication device are comprised of essentially the same materials, signal transmission loss between heterogeneous interfaces is prevented, and provides excellent optical properties and superior processability.